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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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AUG 31 1993

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In re

Amendment of the Commission's Rules
to Establish a Single AM Radio
Stereophonic Transmitting
Equipment Standard

ET Docket
No. 92-298

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KAHN'S RESPONSE TO MOTOROLA TAPE

This memorandum responds to the talking paper¹ and audio tape filed herein with the Secretary by Motorola on August 12, 1993, pursuant to Section 1.1206 of the Rules. In those items Motorola attempts to discredit the transitional "WIN-WIN Solution" outlined by Kahn in his reply comments filed April 20, 1993, at 7-11 and in attachment A to his ex parte memorandum, filed June 18, 1993.

The "WIN-WIN Solution" is based on the fact known mostly to "hands-on" radio engineers that the Motorola signal sounds surprisingly good on a Kahn receiver. Thus, the Commission, by adopting the ISB (or Kahn) standard, will enable receivers with ISB chips to deliver superior AM stereo from ISB stations fulltime and good AM stereo from Motorola-equipped stations without platform motion or inter-modal mono/stereo automatic mode-switching, during daytime hours. Motorola-equipped stations will have an incentive, shortterm, to switch their Motorola

1/ Motorola's sheet is headed "Kahn Win-Win Proposal."


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exciters back on and, longterm, to convert to ISB chips. As the stations convert, their out-of-band radiation will be eliminated. The relatively few users of existing Motorola receivers will continue to receive sub-standard stereo from Motorola-equipped stations but for the first time will have an opportunity to receive AM stereo without platform motion or modal switching.

The Commission should reject Motorola's attempt to discredit the WIN-WIN transitional solution by mis-reading its parameters and by offering an audio recording artificially distorted thereby. Motorola incorrectly suggests that the transitional standard would involve simultaneous 15 kc (Kahn) and 25 kc (Motorola) stereo pilots. This is not Kahn's proposal to the Commission, and both Motorola and Kahn agree that Motorola's straw-man proposal should be rejected on engineering grounds, among others.

Mr. Kahn's detailed rebuttal of the Motorola tape is appended hereto.

Respectfully submitted,


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Attachment
August 31, 1993

MOTOROLA'S DISTORTED TAPE TRIES TO BLOCK THE WIN-WIN SOLUTION

As was made clear in the undersigned's Reply, there is no net advantage for stations with Kahn Communications' stereo transmission equipment to operate with a 25 Hz pilot. Compatible with "Motorola-only" radios means accepting "Platform Motion" and popping in and out of stereo....amputation is not a cure for a headache. A handful of Kahn stations starved for receivers in the 1980s (by Motorola's Sherman violations) tried such operation but all of them went back to the correct pilot within two weeks.

Motorola in its ex parte August 12, 1993 meeting with the Commission conveniently misread the WIN-WIN proposal falsely concluding that ISB stations would use Motorola's pilot...no one at Kahn Communications has ever made such a proposal as it would end up destroying AM Radio. But that is only part of the story. The following briefly responds to Motorola's desperate red herring obfuscation¹ of the AM Stereo WIN-WIN Solution:

MOTOROLA SAYS KAHN HAS PROPOSED THAT ISB BE SELECTED AS THE NATIONAL STANDARD. A 25 HZ PILOT TONE WOULD BE BROADCAST, THUS FORCING IMPROPER DECODING OF THE ISB SYSTEM ON MOTOROLA TYPE RECEIVERS.

The truth: Kahn Communications has always opposed the use of phase separation receivers for AM Stereo reception as such receivers will only reinforce the public's negative AM bias.

MOTOROLA SAYS: TRIED BY ISB BROADCASTERS IN MID 1980's. RESULTS WERE UNACCEPTABLE; BROADCASTERS USING ISB AT THE TIME QUICKLY DISCONTINUED THE PRACTICE.

The truth: YES, A Handful did try and YES, THEY ALL STOPPED ...EVEN THOUGH THEY WERE DESPERATE FOR RECEIVERS...BUT not because of distortion or incompatibility. They STOPPED because of LOSS OF MONO COVERAGE, PLATFORM MOTION AND THE RECEIVERS JUMPING IN AND OUT OF STEREO. THE SAME REASONS THAT CAUSED 90% OF STATIONS TO REJECT MOTOROLA'S ALL TIME MOST HIGHLY PROMOTED BROADCAST SYSTEM.

¹Motorola, as part of its attempt to block the Commission's consideration of the WIN-WIN AM Stereo Solution formally submitted an artificially distorted recording which, as discussed below, totally contradicts field experience. We simulated the artificial distortion by mis-tuning the phase locked loops in the feedback path of the exciter. However, whether or not this tape reflects sheer negligence or was a purposeful act, Motorola should voluntarily withdraw the tape as it is not only misleading, but it is totally irrelevant to the WIN-WIN proposal.

Motorola says: MOTOROLA TYPE RECEIVERS WILL SWITCH TO AND FROM STEREO REPEATEDLY ON HIGHLY PROCESSED STATIONS DUE TO EXCESSIVE PHASE MODULATION.

The truth: MOTOROLA RECEIVERS JUMP IN AND OUT OF STEREO NO MATTER WHATIndeed the FCC has received a number of complaints from mono stations that were suffering from co-channel interference that kept switching on and off Motorola radios.

Motorola says: SIMULTANEOUS TRANSMISSION OF THE 15 HZ IS PILOT WILL CAUSE MANY STEREO RECEIVERS TO SPORADICALLY REVERT TO MONAURAL OPERATION.

Of course...but no knowledgeable engineer would make such a proposal.

RECEIVERS THAT DO SWITCH TO STEREO OPERATION WILL EXHIBIT EXCESSIVE HARMONIC, INTERMODULATION, AND PEAK CLIPPING DISTORTIONS.

But only on Motorola "distorted" tapes...(See footnote 1)
This situation MUST be investigated by the Commission...actually:

ISB TRANSMISSION MAKES "MOTOROLA-ONLY" RADIOS SOUND BETTER

While the inherent drawbacks of "Motorola-only" radio reception far outweigh the advantages, ISB improves their sound.

Motorola's distorted tape proves its desperation. Actually, a number of broadcasters and even Japanese "Motorola-only" receiver manufacturers located in New York and California found that the stereo sound was noticeably superior when the "wrong" receivers were tuned to Kahn equipped stations heard in their areas such as KHJ, KFRC, XTRA, KSL, WBT, WNBC and WQXR.

[When I first received such reports I solely credited the superiority to the fact that the ISB system was selected by stations with strong engineering departments. But on further reflection, I recognized another factor; i.e., the superior spectrum characteristic of the ISB system. The same sideband components of the Motorola signal that creates adjacent channel interference fall outside the bandwidth of the receivers creating harmonic and intermodulation distortion. Furthermore, the loss of such "out-of-band" components reduces the high frequency response dynamically...this is most noticeable because listeners are hearing side-by-side mono components and stereo components, a very serious problem.]

Motorola's CONCLUSION:

THE GENERAL PUBLIC WHICH ALREADY OWNS BETWEEN 20 AND 30 MILLION MOTOROLA TYPE SETS WILL BE FORCED TO ENDURE INFERIOR AND UNACCEPTABLE STEREO RECEPTION. BROADCAST STATIONS WOULD SHORTLY DISCONTINUE THE PRACTICE TO AVOID DRIVING AWAY LISTENERS.

But that's the present situation...with Motorola transmission and reception...That is why the FCC must poll all MOTOROLA stations...those that still have Motorola stereo equipment and those that have gotten rid of it and let the stations tell the real story of why Motorola stereo has flopped. Monopolization will never cure platform motion, loss of coverage, increased interference, and radios that MUST jump in-and-out of stereo.

CERTIFICATE OF SERVICE

I hereby certify that I have caused to be mailed this day
copies of the Kahn's Response to Motorola Tape to:

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William Malone

Washington, D.C.
August 31, 1993